CLAIMS

1. A therapeutic agent comprising a microorganism which has a reduced capacity to grow and replicate in the presence of a microbiostatic substance present in, or indtrouced to, an environment within a subject to which said microorganism migrates following administration wherein said microorganism is capable of inducing an immune response in said subject, which immune response is directed against an antigen on, or secreted by, the microorganism.

2. The therapeutic agent of Claim 1 wherein the microbiostatic agent is bile salts.

3. The therapeutic agent of Claim 1 or 2 wherein the microorganism is a prokaryote.

4. The therapeutic agent of Claim 3 wherein the microorganism is a member of the Enterobacteriaceae.

5. The therapeutic agent of Claim 4 wherein the microorganism is a *Salmonella sp.*

6. The therapeutic agent of Claim 5 wherein the microorganism is *Salmonella dublin.*

7. The therapeutic agent of Claim 6 wherein the microorganism comprises an insertion or deletion in an *rpoB* gene.

8. The therapeutic agent of Claim 7 wherein the microorganism is selected from N-RM4, N-RM8, N-RM9, N.RM15, N-RM20, N-RM25, N-RM27 and R-NM29.

9. The therapeutic agent of Claim 1 wherein the subject is a mammal.

10. The therapeutic agent of Claim 9 wherein the subject is a livestock animal.

11. The therapeutic agent of Claim 10 wherein the livestock animal is selected from the list consisting of a cow, a sheep and a pig.

12. The therapeutic agent of Claim 9 wherein the mammal is a laboratory test animal.

13. The therapeutic agent of Claim 12 wherein the laboratory test animal is selected from the list consisting of a mouse, a rat, a rabbit and a guinea pig.

14. The therapeutic agent of Claim 9 wherein the subject is a human.

15. The therapeutic agent of Claim 1 wherein the microorganism is rendered unable to grow or replicate in the presence of the microbiostatic substance by exposing the microorganism to nalidisic acid and rifampicin or chemical or functional equivalents thereof for a time and under conditions sufficient to induce a metabolic-drift mutation.

16. The therapeutic agent of Claim 1 wherein the antigen is naturally occurring with said microorganism.

17. The therapeutic agent of Claim 1 wherein the antigen is introduced to siad microorganism.

18. The thereapeutic agent of Claim 1 wherein the microorganism induces a humoral and/or T-cell-mediated immune response.

19. The therapeutic agent of Claim 16 wherein the microorganism induces a mucosal immune response.

20. A therapeutic agent comprising a *Salmonella sp.* which carries a metabolic-drift mutation resulting in a reduced capacity to grow and replicate in the presence of bile salts present in a subject to which the therapeutic agent is administered said *Salmonella sp.* is capable of inducing an immune response against itself or an antigen produced by itself.

21. The therapeutic agent of Claim 20 wherein the *Salmonella sp.* is *Salmonella dublin.*

22. The therapeutic agent of Claim 21 wherein the microorganism comprises an insertion or deletion in an *rpoB* gene.

23. The therapeutic agent of Claim 22 wherein the microorganism is selected from N-RM4, N-RM8, N-RM9, N.RM15, N-RM20, N-RM25, N-RM27 and R-NM29.

24. The therapeutic agent of Claim 21 wherein the subject is a livestock animal.

25. The therapeutic agent of Claim 24 wherein the subject is a cow, a sheep or a pig.

26. The therapeutic agent of Claim 25 wherein the subject is a cow.

27. The therapeutic agent of Claim 20 wherein the immune response is a humoral immune response.

28. The therapeutic agent of Claim 27 wherein the humoral immune response is a mucosal immune response.

29. A method of vaccinating a subject against a microorganism or an antigen produced by a microorganism said method comprising selecting a meiroorganism, exposing the microorganism to naladixic acid and rifampicin or their chemical or functional equivalents for a time and under conditions sufficient to induce a metabolic drift mutation which renders the microorganism substantially unable to grow or replicate in the presence of a selected microbiostatic agent, and administering said mutated microorganism to the subject under conditions sufficient for the microorganism to migrate to an environment comprising the microbiostatic agent where it maintains itself for a time sufficient for an immune response to be induced to the microorganism or an antigen produced thereby.

30. The method of Claim 29 wherein the microbiostatic agent is bile salts.

31. The method of Claim 29 or 30 wherein the microorganism is a prokaryote.

32. The method of Claim 31 wherein the microorganism is a member of the Enterobacteriaceae.

33. The method of Claim 32 wherein the microorganism is a *Salmoneall sp.*

34. The method of Claim 33 wherein the microorganism is *Salmonella dublin.*

35. The therapeutic agent of Claim 34 wherein the microorganism comprises an insertion or deletion in an *rpoB* gene.

36. The therapeutic agent of Claim 35 wherein the microorganism is selected from N-RM4, N-RM8, N-RM9, N.RM15, N-RM20, N-RM25, N-RM27 and R-NM29.

37. The method of Claim 29 wherein the subject is a mammal.

38. The method of Claim 37 wherein the subject is a livestock animal.

39. The method of Claim 38 wherein the livestock animal is selected from a cow, a sheep and a pig.

40. The method of Claim 37 wherein the mammal is a laboratory test animal.

41. The method of Claim 40 wherein the laboratory test animal is selected from the list consisting of a mouse, a rat, a rabbit and a guiena pig.

42. The method of Claim 37 wherein the mammal is a human.

43. The method of Claim 41 wherein the microorganism induces a humoral and/or a T-cell-mediated immune response.

44. The method of Claim 43 wherein the microorganism induces a mucosal immune response.

45. A purified culture of a *Salmonella sp.* comprising cells which have been exposed to naladixic acid and rifampicin or their chemical or functional equivalents under conditions sufficient to induce a metabolic-dirft mutation which renders the *Salmonella sp.* substantially incapable of growing or replicating in the presence of bile salts.

46. The purified culture of Claim 45 wherein the *Salmonella sp.* is *Semonella dublin.*

47. The puridifed culture of Claim 45 or 46 wherein the culture is freeze dried, frozen or econstituted.

48. Use of the purified culture of Claim 45 or 46 or 42 in the manufacture of a vaccine to induce an immune response in a mammal to a *Salmonella sp*.